We Claim:

1.   A computer-implemented method for programming an embedded device,
the method comprising,

creating a graphical program, wherein the graphical program specifies a function
to be performed by the embedded device;

storing the graphical program on a mobile computer; and

transmitting the graphical program from the mobile computer to the embedded
device over a serial link;

wherein after said transmitting, the embedded device is operable to execute the
graphical program to perform the specified function.

2.   The method of claim 1, wherein the embedded device comprises a sensor
interface.

3.   The method of claim 2, wherein the sensor interface is coupled to one or
more sensors.

4.   The method of claim 2, wherein the sensor interface comprises a compact
sensor interface between approximately 3cm x 3cm and approximately 6cm x 6cm.

5.   The method of claim 2, wherein the sensor interface includes one or more
sensors.

6.   The method of claim 1, wherein said creating the graphical program is
performed on the mobile computer.

7.   The method of claim 1, wherein the mobile computer comprises a Personal Digital Assistant (PDA).

8.   The method of claim 1, wherein the serial link comprises a serial cable.

9.   The method of claim 1, wherein the serial link comprises a wireless serial link.

10.   The method of claim 9, wherein the wireless serial link comprises an infrared serial link.

11.   The method of claim 10, wherein the infrared serial link comprises an IrDA serial link.

12.   The method of claim 9, wherein the wireless serial link comprises a Bluetooth serial link or an 802.11 serial link.

13.   The method of claim 1, further comprising,
    analyzing the graphical program for function dependencies to generate required modules;
    analyzing the graphical program to determine an execution sequence; and
    generating a flatfile based on the required modules and execution sequence, wherein the flatfile contains the functionality of the graphical program.

14.   The method of claim 13, wherein said transmitting the graphical program from the mobile computer to the embedded device over a serial link comprises,
    transmitting the flatfile to the embedded device over the serial link.

15.   The method of claim 14, further comprising,

the embedded device processing the flatfile to generate an executable, wherein, in the embedded device being operable to execute the graphical program to perform the specified function, the embedded device is operable to execute the executable to perform the specified function.

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    16.   The method of claim 1, further comprising,

the embedded device executing the graphical program to perform the function.

    17.   The method of claim 16, wherein the embedded device executing the

10   graphical program generates data, the method further comprising,

the embedded device sending the data to the mobile computer; and

the mobile computer displaying the data.

    18.   The method of claim 17, wherein the embedded device sending the data to

15   the mobile computer; and the mobile computer displaying the data are performed using a

Front Panel Protocol.

    19.   The method of claim 17, wherein said sending the data to the mobile

computer comprises sending the data to the mobile computer over a serial cable.

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    20.   The method of claim 17, wherein sending the data to the mobile computer

comprises sending the data to the mobile computer over a wireless serial link.

    21.   The method of claim 20, wherein the wireless serial link comprises an

25   infrared serial link.

    22.   The method of claim 20, wherein the infrared serial link comprises an

IrDA serial link.

23.   The method of claim 20, wherein the wireless serial link comprises a Bluetooth serial link or an 802.11 serial link.

24.   The method of claim 16, wherein the embedded device executing the graphical program generates data, the method further comprising,

executing a different graphical program on the mobile computer, wherein said executing the different graphical program comprises,

performing a discovery operation to detect and establish communications with the embedded device;

retrieving the data from the embedded device via a wireless serial transmission medium; and

displaying the data on the mobile computer.

25.   The method of claim 24, wherein the wireless serial transmission medium comprises an infrared serial link.

26.   The method of claim 25, wherein the infrared serial link comprises an IrDA serial link.

27.   The method of claim 25, wherein the wireless serial link comprises a Bluetooth serial link or an 802.11 serial link.

28.   A medium which stores program instructions for programming an embedded device, wherein the program instructions are executable by a mobile computer to perform,

creating a graphical program, wherein the graphical program specifies a function to be performed by the embedded device;

storing the graphical program on a mobile computer; and

transmitting the graphical program from the mobile computer to the embedded device over a serial link;

wherein after said transmitting, the embedded device is operable to execute the graphical program to perform the specified function.

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29.   A system for programming an embedded device, the system comprising,

a mobile computer system, comprising,

a processor;

10   a memory medium coupled to the processor, wherein the memory medium stores the program and a plurality of components of a program execution system, wherein the memory medium also stores program instructions executable to analyze the program to determine a subset of the plurality of components required for execution of the program; and

15   a display coupled to the processor and memory medium; and

an embedded device coupled to the computer system via a serial transmission medium, wherein the embedded device comprises,

a processor; and

a memory medium coupled to the processor, wherein the memory medium

20   stores a minimal execution system;

wherein the memory medium of the mobile computer system further stores program instructions which are executable by the processor of the computer system to,

transmit the program and the subset of the plurality of components to the embedded device over the serial transmission medium;

25   wherein the minimal execution system is executable by the processor of the embedded device to execute the program using the subset of the plurality of components; and

wherein the mobile computer is operable to receive data from the embedded device and display the data on the display.

30.   A hand-held computer, comprising:

a processor;

a memory medium coupled to the processor, wherein the memory medium stores

5   a graphical program, wherein the graphical program specifies a function to be performed

by a sensor interface device; and

a display coupled to the processor and memory medium;

wherein the memory medium further stores program instructions which are

executable by the processor to:

10   analyze the graphical program;

convert the graphical program into a format suitable for transmission over

a serial link to the sensor interface device; and

transmit the converted graphical program from the hand-held computer to

the sensor interface device over the serial link;

15   wherein after said transmitting, the sensor interface device is operable to execute

the converted graphical program to perform the specified function; and

wherein the memory medium further stores program instructions which are

executable by the processor to:

receive data from sensor interface device during execution of the

20   converted graphical program; and

display the received data on the display.